

SEQUENCE LISTING

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(1) GENERAL INFORMATION:

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Schreiber, Stuart L.
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Belshaw, Peter

(ii) TITLE OF INVENTION: REGULATED TRANSCRIPTION OF TARGETED GENES AND
OTHER BIOLOGICAL EVENTS

(iii) NUMBER OF SEQUENCES: 81

(iv) CORRESPONDENCE ADDRESS:

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(2) INFORMATION .. SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 14 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Met Gly Ser Ser Lys Ser Lys Pro Lys Asp Pro Ser Gln Arg
1 5 10

(2) INFORMATION FOR SEQ ID NO:2:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 11 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

GTAAAGTTAA C

11

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 11 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

TGACTCAGCG C

11

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 33 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION: 6..11

(D) OTHER INFORMATION: /note= "Sac II restriction site."

(ix) FEATURE:

(A) NAME/KEY: misc_signal

(B) LOCATION: 12..16

(D) OTHER INFORMATION: /note= "Kozak sequence."

(ix) FEATURE:

(A) NAME/KEY: CDS

(B) LOCATION: 17..31

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION: 17..33

(D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

CGACACCGCG GCCACC ATG GCC ACA ATT GGA GC
Met Ala Thr Ile Gly
1 5

33

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 5 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Met Ala Thr Ile Gly
1 5

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATUR

- (A) NAME/KEY: misc feature
- (B) LOCATION: 6..11
- (D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 12..27
- (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

CGACACTCGA GAGCCCATGA CTTCTGG

27

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 4 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..4
- (D) OTHER INFORMATION: /note= "Translation product of complement of SEQ ID NO:6, bases 9 to 20."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Ser Trp Ala Leu

1

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 41 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 6..11

(D) OTHER INFORMATION: /note= "Xho restriction site."

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION: 12..41

(D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(ix) FEATURE:

(A) NAME/KEY: CDS

(B) LOCATION: 9..41

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION: 28

(D) OTHER INFORMATION: /note= "A to G."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

CGACACTC GAG CTC TGC TAC TTG CTA GGT GGA ATC CTC TTC
Glu Leu Cys Tyr Leu Leu Gly Gly Ile Leu Phe
1 5 10

41

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 11 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Glu Leu Cys Tyr Leu Leu Gly Gly Ile Leu Phe
1 5 10

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 24 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION: 3..8

(D) OTHER INFORMATION: /note= "Eco RI restriction site."

- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION: 9..24
 (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION: 24
 (D) OTHER INFORMATION: /note= "G to C."

- (ix) FEATURE:
 (A) NAME/KEY: misc_signal
 (B) LOCATION: complement (9..11)
 (D) OTHER INFORMATION: /note= "Translational stop encoded in complementary strand."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

GCGAATTCTT AGCGAGGGGC CAGC

24

(2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 4 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

- (ix) FEATURE:
 (A) NAME/KEY: Peptide
 (B) LOCATION: 1..4
 (D) OTHER INFORMATION: /note= "Translational product of complement to SEQ ID NO:10, bases 12 to 23."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Leu Ala Pro Arg

1

(2) INFORMATION FOR SEQ ID NO:12:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 33 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 3..8
- (D) OTHER INFORMATION: /note= "Eco RI restriction."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 12..17
- (D) OTHER INFORMATION: /note= "Sal I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc_signal
- (B) LOCATION: complement (9..11)
- (D) OTHER INFORMATION: /note= "Translational stop signal encoded on complementary strand."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 18..33
- (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

GCGAATTCTT AGTCGACGCG AGGGGCCAGG GTC

33

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 4 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..4
- (D) OTHER INFORMATION: /note= "Translational product of complement to SEQ ID NO:12, bases 18 to 29."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Leu Ala Pro Arg

1

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 4..9
- (D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 13
- (D) OTHER INFORMATION: /note= "T to G."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 4..25
- (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 10..24

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

GGGCTCGAG CTC GGC TAC TTG CTA G
 Leu Gly Tyr Leu Leu
 1 5

25

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 5 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Leu Gly Tyr Leu Leu
 1 5

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 base pairs
- (B) TYPE: nucleic acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 6..11
- (D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 12..26
- (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

CGACACTCGA GGTGACGGAC AAGGTC

26

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 6..11
- (D) OTHER INFORMATION: /note= "Sal I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 12..26
- (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

CGACAGTCGA CCCAATCAGG GACCTC

26

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION: 1..5

(D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION: 10..15

(D) OTHER INFORMATION: /note= "Bsi WI restriction site."

(ix) FEATURE:

(A) NAME/KEY: CDS

(B) LOCATION: 6..32

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

TCGAG TAT CCG TAC GAC GTA CCA GAC TAC GCA G
Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
1 5

33

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 9 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
1 5

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 33 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION: 1..5

(D) OTHER INFORMATION: /note= "Sal I restriction site."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

TCGACTGCGT AGTCTGGTAC GTCGTACGGA TAC

33

(2) INFORMATION FOR SEQ ID NO:21:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 33 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 1..5
- (D) OTHER INFORMATION: /note= "Sal I restriction site."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

TCGACTATCC GTACGACGTA CCAGACTACG CAC

33

(2) INFORMATION FOR SEQ ID NO:22:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 33 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 1..5
- (D) OTHER INFORMATION: /note= "Xho I restriction site."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

TCGAGTGCCT AGTCTGGTAC GTCGTACGGA TAG

33

(2) INFORMATION FOR SEQ ID NO:23:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 80 base pairs

- (B) nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 6..11
- (D) OTHER INFORMATION: /note= "Sac II restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc_signal
- (B) LOCATION: 12..16
- (D) OTHER INFORMATION: /note= "Kozak sequence."

(ix) FEATURE:

- (A) NAME/KEY: misc_signal
- (B) LOCATION: 17..58
- (D) OTHER INFORMATION: /note= "Myristoylation signal."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 59..64
- (D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 65..80
- (D) OTHER INFORMATION: /note= "Zeta homology."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 17..79

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

CGACACCGCG GCCACC ATG GGG AGT AGC AAG AGC AAG CCT AAG GAC CCC 49
Met Gly Ser Ser Lys Ser Lys Pro Lys Asp Pro
1 5 10

AGC CAG CGC CTC GAG AGG AGT GCA GAG ACT G 80
Ser Gln Arg Leu Glu Arg Ser Ala Glu Thr
15 20

(2) INFORMATION FOR SEQ ID NO:24:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Met Gly Ser Ser Lys Ser Lys Pro Lys Asp Pro Ser Gln Arg Leu Glu
1 5 10 15
Arg Ser Ala Glu Thr
20

(2) INFORMATION FOR SEQ ID NO:25:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 12..26

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 6..11
- (D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 12..27
- (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

CGACACTCGA G GAG CTC TGT GAC GAT G
Glu Leu Cys Asp Asp
1 5

27

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 5 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2

Glu Leu Cys Asp Asp
1 5

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 41 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 6..11
- (D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 12..41
- (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 27..29
- (D) OTHER INFORMATION: /note= "GAT to AAG."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 9..41

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

CGACACTC GAG CTC TGC TAC TTG CTA AAG GGA ATC CTC TTC
Glu Leu Cys Tyr Leu Leu Lys Gly Ile Leu Phe
1 5 10

41

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Glu Leu Cys Tyr Leu Lys Gly Il Leu Phe
 1 5 10

(2) INFORMATION FOR SEQ ID NO:29:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 44 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION: 6..11
 (D) OTHER INFORMATION: /note= "Xho I restriction site."

- (ix) FEATURE:
 (A) NAME/KEY: CDS
 (B) LOCATION: 9..44

- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION: 27..44
 (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

CGACACTC GAG CTG CTG GAT CCG AAG CTC TGC TAC TTG CTA AAG
 Glu Leu Leu Asp Pro Lys Leu Cys Tyr Leu Leu Lys
 1 5 10

44

(2) INFORMATION FOR SEQ ID NO:30:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 12 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Glu Leu Leu Asp Pro Lys Leu Cys Tyr Leu Leu Lys
 1 5 10

(2) INFORMATION FOR SEQ ID NO:31:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 6..11
- (D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 12..31
- (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 9..31

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

CGACACTC GAG ACA ACA GAG TAC CAG GTA GC
 Glu Thr Thr Glu Tyr Gln Val Ala
 1 5

31

(2) INFORMATION FOR SEQ ID NO:32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Glu Thr Thr Glu Tyr Gln Val Ala
 1 5

(2) INFORMATION FOR SEQ ID NO:33:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECUL .PE: cDNA

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION: 6..11

(D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION: 12..28

(D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(ix) FEATURE:

(A) NAME/KEY: CDS

(B) LOCATION: 9..28

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

CGACACTC GAG GGC GTG CAG GTG GAG AC
Glu Gly Val Gln Val Glu Thr
1 5

28

(2) INFORMATION FOR SEQ ID NO:34:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 7 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Glu Gly Val Gln Val Glu Thr
1 5

(2) INFORMATION FOR SEQ ID NO:35:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION: 6..11

(D) OTHER INFORMATION: /note= "Sal I restriction site."

(ix) FEATURE

(A) NAME/KEY: misc_feature

(B) LOCATION: 12..27

(D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(ix) FEATURE:

(A) NAME/KEY: CDS

(B) LOCATION: complement (9..26)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

CGACAGTCGA CTTCCAGTTT TAGAAGC

27

(2) INFORMATION FOR SEQ ID NO:36:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 6 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

Leu Leu Lys Leu Glu Val
1 5

(2) INFORMATION FOR SEQ ID NO:37:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION: 7..12

(D) OTHER INFORMATION: /note= "Xho I restriction site."

(ix) FEATURE:

(A) NAME/KEY: CDS

(B) LOCATION: 10..27

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION: 13..27

(D) OTHER INFORMATION: /note= "Regi homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

TCGACACTC GAG ACG GGG GCC GAG GGC
Glu Thr Gly Ala Glu Gly
1 5

27

(2) INFORMATION FOR SEQ ID NO:38:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 6 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

Glu Thr Gly Ala Glu Gly
1 5

(2) INFORMATION FOR SEQ ID NO:39:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 28 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 7..12
- (D) OTHER INFORMATION: /note= "Sal I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: complement (10..18)

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 13..28
- (D) OTHER INFORMATION: /note= "Region of homology with target sequence."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

CCGACAGTCG ACCTCTATTT TGAGCAGC

28

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 3 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Ile Glu Val

1

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 38 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

CGACACCGCG GCCACCATGA AGCTACTGTC TTCTATCG

38

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 28 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

CGACAGTCGA CCGATACAGT CAACTGTC

28

(2) INFORMATION FOR SEQ ID NO:43:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 38 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION: 6..11
 (D) OTHER INFORMATION: /note= "Sac II restriction site."

- (ix) FEATURE:
 (A) NAME/KEY: misc_signal
 (B) LOCATION: 12..16
 (D) OTHER INFORMATION: /note= "Kozak sequence."

- (ix) FEATURE:
 (A) NAME/KEY: CDS
 (B) LOCATION: 17..37

- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION: 17..38
 (D) OTHER INFORMATION: /note= "Gal4 (1-147) coding region."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

CGACACCGCG GCCACC ATG AAG CTA CTG TCT TCT ATC G
Met Lys Leu Leu Ser Ser Ile
1 5

38

(2) INFORMATION FOR SEQ ID NO:44:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 7 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

Met Lys Leu Leu Ser Ser Ile
1 5

(2) INFORMATION FOR SEQ ID NO:45:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 28 base pairs
 (B) TYPE: nucleic acid

(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

(A) NAME/KEY: misc feature
(B) LOCATION: 1..17

(D) OTHER INFORMATION: /note= "Region encoding for C-terminal end of Gal4 (1-147)."

(ix) FEATURE:

(A) NAME/KEY: CDS
(B) LOCATION: 3..17

(ix) FEATURE:

(A) NAME/KEY: misc feature
(B) LOCATION: 18..23

(D) OTHER INFORMATION: /note= "Sal I restriction site."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

GA CAG TTG ACT GTA TCG GTCGACTGTC G
Arg Gln Leu Thr Val Ser
1 5

28

(2) INFORMATION FOR SEQ ID NO:46:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 6 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Arg Gln Leu Thr Val Ser
1 5

(2) INFORMATION FOR SEQ ID NO:47:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 34 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

CGACACCGCG GCCACCATGG TTTCTAAGCT GAGC

34

(2) INFORMATION FOR SEQ ID NO:48:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

CGACAGTCGA CCAACTTGTG CCGGAAGG

28

(2) INFORMATION FOR SEQ ID NO:49:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 34 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 6..11
- (D) OTHER INFORMATION: /note= "Sac II restriction site."

(ix) FEATURE:

- (A) NAME/KEY: misc_signal
- (B) LOCATION: 12..16
- (D) OTHER INFORMATION: /note= "Kozak sequence."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 17..34

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 17..34
- (D) OTHER INFORMATION: /note= "Region encoding N-terminal end of HNF1 (1281)."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

CGACACCGCG GCCACC ATG GTT TCT AAG CTG AGC
Met Val Ser Lys Leu Ser
1 5

34

(2) INFORMATION FOR SEQ ID NO:50:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 6 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Met Val Ser Lys Leu Ser
1 5

(2) INFORMATION FOR SEQ ID NO:51:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 28 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /note= "Region encoding for C-terminal end of HNF1 (1-282)."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 3..17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

CC TTC CGG CAC AAG TTG GTCGACTGTC G
Ala Phe Arg His Lys Leu
1 5

28

(2) INFORMATION FOR SEQ ID NO:52:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 6 amino acids

- (B) E: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Ala Phe Arg His Lys Leu
1 5

(2) INFORMATION FOR SEQ ID NO:53:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_signal
- (B) LOCATION: 3..7
- (D) OTHER INFORMATION: /note= "Kozak sequence."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 1..11
- (D) OTHER INFORMATION: /note= "Complementary to bases 5 to 15 of SEQ ID NO:54."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

GGCCACCATG C

11

(2) INFORMATION FOR SEQ ID NO:54:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 3 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..3
- (D) OTHER INFORMATION: /note= "Translation product of SEQ ID NO:53 and SEQ ID NO:55. Translational start site at base 8 of SEQ ID NO:53."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Met Leu Glu

1

(2) INFORMATION FOR SEQ ID NO:55:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 14..17
- (D) OTHER INFORMATION: /note= "Sac II restriction site overhang."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 1..5
- (D) OTHER INFORMATION: /note= "Xho I restriction site overhang."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 5..15
- (D) OTHER INFORMATION: /note= "Complementary to bases 1 to 11 of SEQ ID NO:53."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

TCGAGCATGG TGGCCGC

17

(2) INFORMATION FOR SEQ ID NO:56:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

TCGACCCTAA GAMGAAGAGA AAGGTAC

27

(2) INFORMATION FOR SEQ ID NO:57:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 27 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

TCGAGTACCT TTCTCTTCKT CTTAGGG

27

(2) INFORMATION FOR SEQ ID NO:58:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 27 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: both
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
 (B) LOCATION: 1..5
 (D) OTHER INFORMATION: /note= "Sal I restriction site overhang."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
 (B) LOCATION: 5..27
 (D) OTHER INFORMATION: /note= "Complementary to SEQ ID NO:60,
 bases 5 to 27."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

TCGACCCTAA GAAGAAGAGA AAGGTAC

27

(2) INFORMATION FOR SEQ ID NO:59:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 11 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ix) FEATURE:

- (A) NAME/KEY: Peptide
 (B) LOCATION: 1..11
 (D) OTHER INFORMATION: /note= "Translation product of SEQ ID

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

Leu	Asp	Pro	Lys	Lys	Lys	Arg	Lys	Val	Leu	Glu
1				5					10	

(2) INFORMATION FOR SEQ ID NO:60:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: both
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 1..5
- (D) OTHER INFORMATION: /note= "Xho I restriction site overhang."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 5..27
- (D) OTHER INFORMATION: /note= "Complementary to SEQ ID NO:58, bases 5 to 27."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

TCGAGTACCT TTCTCTTCTT CTTAGGG

27

(2) INFORMATION FOR SEQ ID NO:61:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

CGACAGTCGA CGCCCCCCCG ACCGATGTC

29

(2) INFORMATION FOR SEQ ID NO:62:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 26 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

CGACACTCGA GCCCACCCTA CTCGTC

26

(2) INFORMATION FOR SEQ ID NO:63:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 29 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 6..11
- (D) OTHER INFORMATION: /note= "Sal I restriction site."

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 12..29

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 12..29
- (D) OTHER INFORMATION: /note= "Region encoding Nterminal end of VP16 (413490)."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

CGACAGTCGA C GCC CCC CCG ACC GAT GTC
 Ala Pro Pro Thr Asp Val
 1 5

29

(2) INFORMATION FOR SEQ ID NO:64:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 6 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64

Ala Pro Pro Thr Asp Val
1 5

(2) INFORMATION FOR SEQ ID NO:65:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 26 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 1..15

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..15
- (D) OTHER INFORMATION: /note= "Region encoding C-terminal end of VP16 (413-490)."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

GAC GAG TAC GGT GGG CTCGAGTGTC G
Asp Glu Tyr Gly Gly
1 5

26

(2) INFORMATION FOR SEQ ID NO:66:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 5 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

Asp Glu Tyr Gly Gly
1 5

(2) INFORMATION FOR SEQ ID NO:67:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

GGAATTCCAT ATGGGCGTGC AGG

23

(2) INFORMATION FOR SEQ ID NO:68:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 5 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

His Met Gly Val Gln
1 5

(2) INFORMATION FOR SEQ ID NO:69:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 39 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

CTGTCCCGGG ANNNNNNNNN TTTCTTTCCA TCTTCAAGC

39

(2) INFORMATION FOR SEQ ID NO:70:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 11 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

Arg Ser Xaa Xaa Xaa Lys Lys Gly Asp Glu Leu
1 5 10

(2) INFORMATION FOR SEQ ID NO:71:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 64 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

CTGTCCCGGG AGGAATCAAA TTTCTTTCCA TCTTCAAGCA TNNNNNNNNN GTGCACCACG 60
CAGG

(2) INFORMATION FOR SEQ ID NO:72:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 19 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

Arg	Ser	Ser	Asp	Phe	Lys	Lys	Gly	Asp	Glu	Leu	Met	Xaa	Xaa	Xaa	His
1				5				10				15			

Val Val Cys

(2) INFORMATION FOR SEQ ID NO:73:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 57 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

CGCGGATCCT CATTCCAGTT TTAGAAGCTC CACATCNNNN NNNNNAGTGG CATGTGG 57

(2) INFORMATION FOR SEQ ID NO:74:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 15 amino acids
 - (B) TYPE: amino acid

(D) POLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

Glu	Leu	Lys	Leu	Leu	Glu	Val	Asp	Xaa	Xaa	Xaa	Thr	Ala	His	Pro
1				5					10					15

(2) INFORMATION FOR SEQ ID NO:75:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 28 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

CGCGGATCCT CATTCCAGTT TTAGAAGC

28

(2) INFORMATION FOR SEQ ID NO:76:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 5 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

Glu	Leu	Lys	Leu	Leu
1				5

(2) INFORMATION FOR SEQ ID NO:77:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 28 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

CGACAGTCGA CCGATACAGT CAACTGTC

28

(2) INFORMATION FOR SEQ ID NO:78:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 28 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

CGACAGTCGA CCAACTTGTG CCGGAAGG

28

(2) INFORMATION FOR SEQ ID NO:79:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 17 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

TCGAGCATGG TGGCCGC

17

(2) INFORMATION FOR SEQ ID NO:80:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 27 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

TCGAGTACCT TTCTCTTCTT CTTAGGG

27

(2) INFORMATION FOR SEQ ID NO:81:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 26 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO

CGACACTCGA GCCCACCGTA CTCGTC